

PRECIPITATION.

[In inches and hundredths.]

The distribution of precipitation for the month of September, 1894, as determined by reports from about 2,000 stations, is exhibited on Chart III. The numerical details are given in Tables I, II, and III; the first of these also gives the average departures from the normal for each district, whereas the average departure for each State is given in Table XII for each State Weather Service.

NORMAL PRECIPITATION FOR SEPTEMBER.

The normal precipitation for September is shown on Chart IX of the Atlas of Bulletin C, entitled "Rainfall and Snow of the United States, Compiled to the End of 1891, with Annual, Seasonal, Monthly, and other Charts," by Mark W. Harrington, Chief of the Weather Bureau, Washington, 1894. From this chart it appears that there is a narrow belt of rainfall exceeding 3 inches on the coast of Washington. The precipitation is less than 3 inches south and east of this region to a belt extending from central Minnesota southward to western Texas. East of this belt the rainfall increases to 5 inches along the coast of the Gulf and south Atlantic States; there is a special increase from 5 inches in north-west Florida to 12 inches at the extreme southern end of the Florida Peninsula.

PRECIPITATION FOR CURRENT MONTH.

The precipitation for the current September was heaviest, 17.29, at Key West and, 17.28, at Tampa, with a slight increase, as reported by voluntary observers, in the interior of the Peninsula. It exceeded 8 inches on the south Atlantic coast, and also in the northern portion of New Jersey. The rainfall averaged 3 and 4 inches on the immediate central and west Gulf coast, and 2 or 3 inches over the Mississippi, Ohio, and lower Missouri valleys, with a maximum of 7 inches in western Missouri and eastern Kansas. On the Pacific coast 1 or 2 inches fell in northern California; 4 to 6 inches on the Washington and Oregon coasts, with a maximum of 13.84 at Neah Bay.

CURRENT DEPARTURES FROM NORMAL PRECIPITATION.

The precipitation for September was generally deficient in the central portion of the Gulf States and Texas, also slightly deficient in New England. There was an excess on the Pacific coast and in the middle and south Atlantic States.

The principal departures from the normal at Weather Bureau stations were as follows:

*Excesses.*—Tampa, 11.9; Key West, 9.9; Jacksonville, 8.7; Titusville, 7.3; Tatoosh Island, Neah Bay, and Palestine, 6.6; Chicago, 5.4; Jupiter and Charleston, 4.8; Southport, 4.4.

*Deficits.*—Galveston, 4.4; Corpus Christi, 4.1; New Orleans, 4.0; Shreveport, 3.6; Narragansett Pier, 2.9; San Antonio and Knoxville, 2.7; Abilene and Montgomery, 2.3; Charlotte, 2.2.

Considered by districts, the precipitation for September, 1894, when compared with the normal for the month, furnishes the departures given in Table I, as expressed in inches. By dividing those departures by the normal precipitation for September we obtain the following corresponding percentages (precipitation is in excess when the percentage of the normal exceeds 100):

Above the normal: Middle Atlantic, 120; south Atlantic, 146; Key West, 234; lower Lake, 116; upper Lake, 116; North Dakota (extreme northwest), 112; Missouri Valley, 144; northern slope, 121; middle slope, 200; middle plateau, 177; northern plateau, 120; north Pacific, 163; middle Pacific, 290; southern Pacific, 500.

Below the normal: New England, 74; east Gulf States, 71; west Gulf States, 74; Ohio Valley and Tennessee, 84;

upper Mississippi Valley, 94; southern slope (Abilene), 19; southern plateau, 44.

For certain voluntary stations of rather long periods of observation the normal and extreme monthly precipitations and the departures are shown in detail in Table X b, which is now placed among the meteorological tables instead of being inserted in the text as heretofore.

ACCUMULATED PRECIPITATION.

The total accumulated monthly departures from normal precipitation from the beginning of the year to the end of the current month are given in the second column of the following table; the third column gives the ratio of the current accumulated precipitation to its normal value:

Districts.	Accumulated departures.	Accumulated precipitation.	Districts.	Accumulated departures.	Accumulated precipitation.
	<i>Inch.</i>	<i>Per ct.</i>		<i>Inch.</i>	<i>Per ct.</i>
New England .....	-11.00	68	Key West.....	+ 3.60	112
Middle Atlantic.....	- 5.40	85	West Gulf .....	0.00	100
South Atlantic.....	- 2.30	95	Middle slope .....	+ 1.30	108
East Gulf.....	- 4.20	91	Southern slope (Abilene).....	+ 1.70	108
Ohio Valley and Tennessee.....	- 7.40	80	Middle plateau .....	+ 1.50	114
Lower Lake.....	- 4.00	85	Northern plateau.....	+ 2.50	121
Upper Lake.....	- 1.10	96	North Pacific .....	+11.70	131
North Dakota (Ex. NW.).....	- 0.50	97			
Upper Mississippi.....	- 9.70	66			
Missouri Valley.....	- 7.14	73			
Northern slope.....	- 0.90	93			
Southern plateau.....	- 3.50	62			
Middle Pacific.....	- 1.30	93			
South Pacific.....	- 4.20	54			

DIURNAL VARIATION.

Table IV b gives the total precipitation for each hour of seventy-fifth meridian time, as deduced from self-registering gauges kept at about 43 regular stations of the Weather Bureau; of these 27 are float gauges and 6 are weighing gauges.

YEARS OF GREATEST PRECIPITATION FOR SEPTEMBER.

The precipitation for the current month was the greatest on record for the month of September at regular Weather Bureau stations, as shown in the following table:

Station.	Current precipitation.		Previous maximum.	
	Amount.	Departure.	Amount.	Year.
Harrisburg, Pa.....	5.53	+1.0	4.53	1889
Chicago, Ill.....	8.28	+5.4	6.93	1886
Kansas City, Mo.....	7.14	+2.7	7.08	1889
Springfield, Mo.....	8.52	+5.0	8.11	1890
Wichita, Kans.....	9.22	+8.0	2.12	1892
Palestine, Tex.....	10.04	+6.6	7.12	1886
Lander, Wyo.....	2.29	+2.0	0.77	1891
Los Angeles, Cal.....	0.73	+0.7	0.34	1889
San Francisco, Cal.....	1.05	+0.8	0.98	1888
Tatoosh Island, Wash.....	11.52	+6.6	11.06	1891
Neah Bay, Wash.....	13.84	+6.6	12.15	1885

YEARS OF LEAST PRECIPITATION FOR SEPTEMBER.

The precipitation for the current month was the least on record for the month of September at regular Weather Bureau stations, as shown in the following table:

Station.	Current precipitation.		Previous minimum.	
	Amount.	Departure.	Amount.	Year.
Narragansett Pier, R. I.....	1.90	- 2.9	1.99	1887
Knoxville, Tenn.....	0.47	- 2.7	0.63	1892

EXCESSIVE PRECIPITATION.

The following tables for September, 1894, show, by States,

the number of stations reporting total precipitation to equal or exceed 10.00 inches during this month, 2.50 in 24 hours, and 1.00 in 1 hour:

Monthly precipitation to equal or exceed 10.00 inches.

Table with 4 columns: State, Number of stations, State, Number of stations. Lists states like Florida, New Jersey, Pennsylvania, Georgia with their respective station counts.

Daily precipitation to equal or exceed 2.50 in 24 hours.

Table with 6 columns: State, Number of stations, Dates, State, Number of stations, Dates. Lists states and the specific dates when precipitation reached or exceeded 2.50 inches in 24 hours.

Hourly precipitation to equal or exceed 1.00 inch.

Table with 6 columns: State, Number of stations, Dates, State, Number of stations, Dates. Lists states and the specific dates when hourly precipitation reached or exceeded 1.00 inch.

Excessive precipitation, by stations, for September, 1894.

Table with 6 columns: State and station, Monthly rainfall to inches, or more, Rainfall 2.50 inches, or more, in 24 hours, Rainfall 1 inch, or more, in one hour. Lists stations like Healing Springs, Fayetteville, Hot Springs, etc., with their rainfall data.

Excessive precipitation—Continued.

Table with 6 columns: State and station, Monthly rainfall to inches, or more, Rainfall 2.50 inches, or more, in 24 hours, Rainfall of 1 inch, or more, in one hour. Lists stations across various states including Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, etc., with their rainfall data.

*Excessive precipitation—Continued.*

State and station.	Monthly rainfall in inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Louisiana.</i>						
Alexandria				2.10	2 00	8
Baton Rouge		2.07	11-12			
Cameron	10.45	3.70	9			
Do		2.50	11			
Grand Coteau		2.03	11			
Melville		4.00	11-12			
Opelousas		5.00	11-12			
Paincourtville				1.60	1 35	6
Port Eads		2.99	8			
<i>Maine.</i>						
Bar Harbor		3.36	20			
Belfast		2.84	19-20			
Madison		3.25	20			
Mayfield		3.95	19-20			
North Bridgton		2.85	20-21	1.93	0 30	20
<i>Maryland.</i>						
Bachmans Valley		3.28	6-7			
Darlington		3.26	19			
<i>Massachusetts.</i>						
Full River		3.10	19-20			
Long Plain		2.81	19-20			
Mount Nonotuck		2.66	19-20			
Somerset		2.87	19-20			
Springfield Armory		3.37	19-20			
Taunton b		2.53	19-20			
Taunton c		2.88	19-20			
Taunton d		2.60	19-20			
Winchendon		3.91	10			
<i>Michigan.</i>						
Adrian		3.35	4			
Alma		5.50	7			
Grand Haven		3.72	6-7			
Stanton		2.95	7-8			
<i>Minnesota.</i>						
Caledonia		2.60	7			
Maple Plain				1.00	1 00	14
New Ulm				1.00	1 00	21
<i>Mississippi.</i>						
Bloxi		3.37	5-6			
Duck Hill				1.12	1 00	8
Palo Alto				1.19	1 00	12
Port Gibson		3.05	9-10			
Water Valley		2.70	10			
Waynesboro b		3.22	7-8			
<i>Missouri.</i>						
Arthur		3.10	4-5			
Carthage		2.59	4			
Columbia		3.93	14-15	2.51	1 20	14
Gayoso				1.70	1 00	12
Gordonville		2.83	5	2.83	1 00	5
Harrisonville		3.26	3			
Kansas City		3.93	2-3	1.81	1 00	3
Kidder		4.19	2-3			
Lamar		2.74	3			
Lebanon				1.76	1 30	9
Maryville		2.63	1-2			
Mexico		3.33	14-15			
Oak Ridge		2.50	5			
Panacea		2.80	2			
Sarcoxie		2.56	3-4			
Springfield		3.25	14-15	1.02	0 30	10
Stellada		2.64	2-3			
Virgil City		3.70	2-3			
Warrensburg		2.92	3-4			
<i>Nebraska.</i>						
Cortland		2.87	2			
Creighton		2.80	8			
Nebraska City		3.75	5			
Seward				1.80	1 30	2
<i>New Hampshire.</i>						
North Conway		2.75	10			
Plymouth		2.66	20	1.56	0 40	20
Stratford				1.72	1 12	10
<i>New Jersey.</i>						
Asbury Park		5.83	18-19			
Bayonne		3.91	18-19			
Billingsport		2.86	18	2.86	2 30	18
Bridgeton		2.60	8-9			
Camden		3.31	18-19			
Cape May		2.64	8-9			
Cape May C. H.		2.60	8-9	2.60	2 00	8-9
Do		4.50	19-20			
Charlotteburg	11.40	7.76	18-19			
Chester		6.30	17-19			
Deckertown		4.51	18-19			
Dover		5.08	18-19			
Egg Harbor City		3.93	18-19	1.75	1 40	18
Elizabeth		3.54	18-19			
Franklin Furnace		4.15	18-19			
Friesburg		5.11	8-9			
Hightstown		2.51	8			
Imlaystown		3.61	8			
Do		4.81	18-19			
Junction		5.34	18-19			
Millville		2.84	8-9			
Newark a		4.03	18-19			
New Brunswick (W. B.)		5.74	18-19			
New Brunswick a	11.03	10.85	18-19			
New Brunswick b	10.85	6.03	18-19			
Newton	11.13	4.50	18-19			
Oceanic		4.23	8-9	3.35	1 15	8

*Excessive precipitation—Continued.*

State and station.	Monthly rainfall in inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>New Jersey—Cont'd.</i>						
Papakating		4.66	18-19			
Paterson	10.41	7.44	18-19			
Plainfield		3.43	18-19	1.51	1 00	8
River Vale		4.90	18-20			
Salem		3.50	9			
South Orange		5.40	18-19			
Tenafly	10.23	7.29	18-19			
Trenton		2.60	8			
Vineland		3.63	8-9			
Woodbine		2.60	8-9			
Do	11.65	5.55	18-19			
<i>New York.</i>						
Bedford		3.09	19			
Minnewaska		5.60	19-20			
New York		4.75	18-19			
Port Jervis		4.61	18-19			
Warwick	10.11					
West Point		3.37	19			
Willetts Point		2.65	8			
Do		3.90	19			
<i>North Carolina.</i>						
Auburn						
Chapel Hill		3.99	17-19	1.30	1 00	
Charlotte		3.16	17-18			
Fair Bluff		3.40	26-27			
Fayetteville		3.50	26-27			
Goldboro		2.55	27-28			
Greensboro		3.69	18	2.69	2 30	18
Hatteras		5.15	26-27			
Horse Cove		3.77	17	3.00	1 00	17
Kittyhawk		4.30	26-27			
Lillesville		4.00	16-18			
Lumberton		5.11	26-27			
Pittsboro		2.70	18			
Selma		2.91	27			
Southern Pines		3.50	27			
Southport		3.76	26-27	1.16	0 57	11
<i>North Dakota.</i>						
Bismarck		3.67	6-7	2.00	1 00	7
Napoleon				1.25	0 30	7
<i>Ohio.</i>						
Akron						
Dupont						
Hillhouse		3.27	19-20	1.64	0 35	8
Pataskala		2.50	18-19	1.22	1 00	8
Ridge		2.97	19			
Sylvania		2.61	5			
Weymouth		2.57	10			
<i>Oklahoma.</i>						
Fort Sill				2.03	1 30	1
Stillwater		2.84	4-5			
<i>Oregon.</i>						
Nehalem	11.48					
<i>Pennsylvania.</i>						
Bethlehem		4.67	8	3.20	0 40	8
Browers Lock		3.93	9			
Do		3.17	18			
Clarion		4.07	7-8			
Do	12.36	2.53	10			
Coatesville		2.93	8			
Do		3.27	19			
Doylestown		4.00	7			
East Mauch Chunk		2.87	19			
Easton		3.90	19-20			
Forks of Neshaminy		3.33	8			
Frederick		2.51	8			
Gettysburg		2.50	18-19			
Huntington		2.83	9			
Kennett Square		2.80	8-9			
Do		2.60	19			
Lansdale		3.60	8			
Lock Haven				1.45	1 00	8
Lycippus				1.80	0 35	7
Do				1.07	0 15	8
Do				1.00	0 45	14
Mahoning		3.60	19-20			
Ottsville		4.21	18			
Parker		3.61	19-20			
Philadelphia (W. B.)				1.00	1 00	8
Philadelphia b		2.57	8-9			
Phoenixville		2.08	8			
Do		3.67	17-18			
Point Pleasant	10.67	7.32	18	7.32	7 40	18
Pottstown		4.17	8			
Quakertown		2.78	18			
Reading		2.55	8			
Saltsburg				1.33	0 45	14
Smiths Corners	11.61	7.70	18			
Wellsboro		2.60	18-19			
York		2.68	16-17	2.20	0 57	16
<i>Rhode Island.</i>						
Kingston		2.50	19-20			
<i>South Carolina.</i>						
Allendale		3.70	26-27			
Batesburg		2.90	26-27			
Blackville		3.10	26-27			
Blenheim		3.30	26			
Branchville		5.20	27-28			
Camden		3.80	17-18			
Charleston	10.94	7.00	26-27	1.98	1 00	26
Cheraw a		4.12	26-27			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall in inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>South Carolina—Cont'd.</i>						
Cheraw	2.55	18				
Do	4.83	26-27				
Conway	4.87	26-28				
Edisto	4.37	26-27				
Effingham	2.80	18				
Do	2.60	26-27				
Flint Hill	3.50	17-18				
Florence	3.98	26-27				
Georgetown	10.35	6.00	26			
Hardeeville	3.75	12-13				
Do	4.60	26-27				
Kingstree a	4.89	26-27				
Kingstree b	3.00	26				
Longshore	3.58	17				
McCormick	2.60	17-18	1.25	1 00	17	
Pinopolis	8.00	26-27				
Port Royal	3.26	18				
Do	4.20	26-27				
St. Georges	10.42	5.50	26-27			
St. Matthews	3.70	26-27				
St. Stephens	4.40	26-27				
Simpsonville			1.24	0 25	11	
Society Hill	4.12	26				
Statesburg	3.78	18				
Trenton	3.47	26-27				
Trial	5.47	26-27				
Watts	3.45	17-18				
<i>South Dakota.</i>						
Castlewood	2.63	5				
<i>Tennessee.</i>						
London			1.30	1 15	13	
<i>Texas.</i>						
Alice			1.80	0 45	15	
Beaumont	3.04	11	2.01	2 00	24	
Brazoria			2.34	2 15	22	
Camp Eagle Pass	3.20	23				
Fort Clark	3.42	15-16				
Do	2.80	18				
Fort Stockton	2.72	7-8	2.15	2 00	7	
Hallettsville			1.36	1 00	8	
Hearne			2.25	1 25	10	
Marshall	3.60	12				
Mountain Spring	3.25	15				
Palestine	10.04	5.26	10-11	2.12	1 15	10
Do	3.13	23-24	1.21	1 00	24	
Victoria	3.13	24				
<i>Vermont.</i>						
Vernon	2.72	10				
<i>Virginia.</i>						
Avon	2.70	29-30				
Birdsnest	3.60	27-28				
Buckingham	3.30	29				
Houston	2.50	18				
Nottoway	3.24	29-30				
Richmond (near)	2.69	19				
<i>Washington.</i>						
Neah Bay	13.84					
Tatoosh Island	11.52					
<i>West Virginia.</i>						
Burlington	3.40	18-19				
Madison	3.30	18	3.30	2 00	18	
<i>Wisconsin.</i>						
Belleville			2.00	1 10	8	
Beloit	3.65	7				
Delavan	2.60	7				
Harford	2.56	15				
Janesville	2.70	14				
La Crosse	3.48	6-7				
Milwaukee			1.00	0 50	9	
Oconomowoc	3.01	15				
Sharon	3.40	7				
Viroqua	2.91	6-7				

Excessive precipitation in August, 1894, received too late for publication.

<i>Texas.</i>						
Coldwater	3.10	1				
San Antonio (W. B.)	2.98	8				

MAXIMUM RAINFALL FROM SELF-REGISTERING GAUGES.

The following table gives the heaviest rainfall during September, 1894, for periods of 5, 10, and 60 minutes, as re-recorded on self-registering rain gauges at regular stations of the Weather Bureau. This record refers strictly to rainfall. About 37 stations are furnished with self-registering float rain gauges and 6 with the self-registering-weighing rain-and-snow gauge. The float gauge does not record snowfall, and both forms are liable to be interrupted by snow and ice:

Maximum rainfall in one hour or less.

Station.	Maximum rainfall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		Inch.		Inch.	
Atlanta, Ga.	0.23	11	0.39	17	1.70	17
Baltimore, Md.	0.30	8	0.47	8	0.50	8
Bismarck, N. Dak.*	0.75	7	1.00	7	2.00	7
Boston, Mass.	0.09	20	0.13	20	0.31	20
Buffalo, N. Y.*	0.16	13	0.24	13	0.58	5
Chicago, Ill.	0.20	6, 8	0.40	6	0.63	6
Cincinnati, Ohio	0.14	17	0.25	17	0.45	17
Cleveland, Ohio	0.19	8	0.30	8	0.40	5
Denver, Colo.	0.22	7	0.37	7	0.55	7
Detroit, Mich.	0.10	15	0.13	15	0.26	3
Dodge City, Kans.	0.16	5	0.20	5	0.30	5
Duluth, Minn.	0.12	14	0.17	14	0.30	14, 29
Eastport, Me.	0.05	17	0.10	17	0.19	17
Galveston, Tex.	0.25	17	0.39	17	0.71	14
Indianapolis, Ind.	0.13	15	0.21	15	0.35	10
Jacksonville, Fla.	0.36	5	0.38	5	0.97	26
Jupiter, Fla.*	0.35	14	0.50	14	0.75	25
Kansas City, Mo.	0.35	3	0.60	3	1.81	3
Key West, Fla.						
Marquette, Mich.	0.06	22	0.10	22	0.30	22
Memphis, Tenn.	0.15	10	0.20	10	0.45	10
Milwaukee, Wis.	0.65	9	0.70	9	1.00	9
Nantucket, Mass.	0.15	17	0.17	17	0.41	30
Nashville, Tenn.	0.26	10	0.31	10	0.98	16
New Orleans, La.	0.06	12	0.09	12	0.18	12
New York, N. Y.	0.30	8	0.50	8	0.96	19
Norfolk, Va.	0.35	1	0.50	1	0.77	1
Omaha, Neb.						
Philadelphia, Pa.	0.18	8	0.35	8	1.00	8
Pittsburg, Pa.	0.25	7	0.40	7	0.65	19
Portland, Me.	0.13	20	0.21	20	0.41	20
Portland, Oreg.	0.02	1	0.04	1	0.13	1
Rochester, N. Y.	0.10	20	0.13	20	0.20	20
St. Louis, Mo.	0.22	4	0.25	4	0.60	4
St. Paul, Minn.	0.21	14	0.23	14	0.40	14
Salt Lake City, Utah	0.04	7	0.07	6	0.20	6
San Diego, Cal. †						
San Francisco, Cal.	0.03	29, 30	0.05	29, 30	0.16	30
Savannah, Ga.	0.20	12	0.35	12	0.73	12
Seattle, Wash.	0.22	5	0.31	5	0.42	5
Vicksburg, Miss.	0.22	13	0.40	13	0.66	13
Washington, D. C.	0.08	19	0.13	19	0.38	19
Wilmington, N. C.	0.17	5	0.31	5	0.92	6

\* Record incomplete.

† Less than 0.05 in 1 hour.

FREQUENCY OF EXCESSIVE PRECIPITATION.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several States and Territories for September during the last twenty-four years:

Frequency of excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Florida	22	Washington	4
Texas	14	Missouri	3
North Carolina	12	Wisconsin	3
Georgia	10	New York	3
Iowa	8	Ohio	2
Louisiana	8	Delaware	2
Alabama	7	Michigan	2
South Carolina	7	Illinois	2
New Hampshire	6	Oregon	2
Mississippi	6	Arkansas	1
Kansas	5	Connecticut	1
New Jersey	5	District of Columbia	1
Pennsylvania	5	Indian Territory	1
Virginia	5	Kentucky	1
Indiana	4	Maryland	1
Massachusetts	4	Minnesota	1
Nebraska	4	Vermont	1

Frequency of excessive daily precipitation.

North Carolina	22	Michigan	13
Texas	21	Louisiana	13
Florida	20	Ohio	12
Georgia	18	Wisconsin	11
Mississippi	18	Connecticut	10
South Carolina	18	Pennsylvania	10
Kansas	16	New Jersey	10
Virginia	16	Kentucky	10
Illinois	15	Nebraska	10
Iowa	15	New York	10
Alabama	15	Indiana	10
Tennessee	14	North and South Dakota	9
Missouri	14	Minnesota	9
Arkansas	14	Maryland	9

Frequency of excessive daily precipitation—Continued.

State.	No. years noted.	State.	No. years noted.
Massachusetts	8	Vermont	4
Indian Territory	8	Arizona	2
New Hampshire	6	New Mexico	2
West Virginia	5	Colorado	2
Maine	5	Delaware	2
District of Columbia	4	Rhode Island	2
Oregon	4	California	1
Washington	4	Montana	1

Frequency of excessive hourly precipitation.

Texas	18	Michigan	4
Florida	16	Virginia	4
Georgia	13	Kentucky	4
Nebraska	11	Missouri	4
North Carolina	10	Arkansas	3
Illinois	8	Indiana	3
Louisiana	8	Minnesota	3
New York	7	New Hampshire	3
Kansas	7	Wisconsin	3
Tennessee	7	North and South Dakota	2
Alabama	7	Maine	2
South Carolina	6	New Jersey	2
Pennsylvania	6	District of Columbia	1
Mississippi	6	Massachusetts	1
Arizona	5	Vermont	1
Iowa	5	Connecticut	1
Ohio	5	Maryland	1
Indian Territory	5	Washington	1
West Virginia	5		

EXCEPTIONAL PRECIPITATION.

The following tables give exceptionally heavy monthly, daily, and hourly precipitations reported for September, by any station, regular or voluntary, and in any year since 1871:

Exceptional monthly precipitation.

Station and state.	Amt.	Year.	Station and state.	Amt.	Year.
Brownsville, Tex.	30.57	1886	Mayport, Fla.	33.24	1885
Saint Marys, Ga.	27.41	1885	Brunswick, Ga.	22.03	1885
Elsworth, N. C.	26.50	1881	Homeland, Fla.	21.15	1890
Galveston, Tex.	26.01	1885	Jacksonville, Fla.	21.12	1878
Paterson, N. J.	25.98	1882	Spartanburg, S. C.	20.44	1888
Biscayne, Fla.	25.10	1878	Wilmington, N. C.	20.10	1877
St. Augustine, Fla.	23.90	1871	Darien, Ga.	20.05	1892
Merritts Island, Fla.	23.78	1878			

Exceptional daily precipitation.

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
Paterson, N. J.	17.90	21-24, 1882	Tarpon Springs, Fla.	7.43	18-19, 1894
Elsworth, N. C.	13.00	15-16, 1881	Mt. Washington, N. H.	7.41	15, 1880
Clermont, N. C.	12.50	25-26, 1894	Abbeville, S. C.	7.40	10, 1888
Franklin, La.	12.30	6-7, 1893	Point Pleasant, Pa.	7.32	18, 1894
Gainesville, Fla.	11.81	26-27, 1894	Fort Meade, Fla.	7.30	25, 1894
Federal Point, Fla.	11.25	25-26, 1894	Wilmington, N. C.	7.30	10, 1883
Kissimmee, Fla.	11.25	25-26, 1894	Tenally, N. J.	7.29	18-19, 1891
Grasnere, Fla.	10.89	25-26, 1894	Key West, Fla.	7.05	24-25, 1894
Genoa, Nebr.	10.60	1, 1887	Wytheville, Va.	7.02	12, 1878
Hypoluxo, Fla.	10.40	24-25, 1894	Charleston, S. C.	7.00	26-27, 1884
New Smyrna, Fla.	10.05	25-26, 1894	Mobile, Ala.	7.00	18, 1877
Paincourtville, La.	10.00	6-8, 1893	Fort Hays, Kans.	7.00	12, 1871
Darien, Ga.	9.87	17-19, 1892	Shreveport, La.	7.00	17, 1875
Jacksonville, Fla.	9.86	25-26, 1894	Portsmouth, N. C.	7.00	13, 1884
Donaldsonville, La.	9.84	7-8, 1893	Columbus, N. C.	6.94	21-22, 1892
Merritts Island, Fla.	9.66	25, 1894	Homeland, Fla.	6.85	1, 1890
Brooksville, Fla.	9.58	25-26, 1894	Ponotoc, Miss.	6.82	12, 1892
Enstis, Fla.	9.33	25-26, 1894	Central, S. C.	6.80	5-6, 1893
Riley, Ill.	9.28	7, 1894	Plaquemine, La.	6.75	7-8, 1893
Amelia, Fla.	9.00	25-26, 1894	Hannond, La.	6.74	7-8, 1893
Homeland, Fla.	8.85	25, 1894	Greenville, Miss.	6.68	4-5, 1892
Orange Park, Fla.	8.52	25-26, 1894	Milledgeville, Ga.	6.50	25, 1890
Jeanerette, La.	8.32	6-7, 1893	Topton, Miss.	6.50	7-8, 1893
Green Cove Sp'gs, Fla.	8.25	25-26, 1894	South Canisteo, N. Y.	6.48	10, 1890
Nashua, Iowa	8.23	25, 1890	Columbia, Tex.	6.47	10-11, 1890
Orange City, Fla.	8.10	25, 1894	Hot Springs, Ark.	6.45	22-23, 1890
Pinopolis, S. C.	8.00	26-27, 1894	Columbus, N. C.	6.45	9, 1893
Emilie, La.	8.00	6-7, 1893	Olga, Fla.	6.30	25-26, 1894
Key West, Fla.	7.90	21-22, 1890	Chester, N. J.	6.30	18-19, 1894
College Station, Tex.	7.84	4, 1899	Amite, La.	6.15	6-8, 1893
Jesup, Ga.	7.82	27, 1885	Hardeeville, S. C.	6.14	8-9, 1893
Charlotteburg, N. J.	7.75	18-19, 1894	Lonoke, Ark.	6.12	11, 1892
Smiths Corners, Pa.	7.70	18, 1894	Columbus, N. C.	6.10	13, 1892
Jupiter, Fla.	7.65	24-25, 1894	Covington, La.	6.09	6-8, 1893
Sedan, Kans.	7.52	10-11, 1889	New Brunswick, N. J. & a.	6.03	18-19, 1894
South Fork, Ky.	7.50	17-18, 1880	Flat Rock, N. C.	6.03	11, 1893
South Orange, N. J.	7.50	23, 1882	Brazoria, Tex.	6.03	24, 1891
Paterson, N. J.	7.44	18-19, 1894	Purell, Ind. T.	6.02	23-24, 1893

Exceptional daily precipitation—Continued.

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
Georgetown, S. C.	6.00	26, 1894	Trial, S. C.	5.47	26-27, 1894
Huntingburg, Ind.	6.00	13, 1892	Charleston, S. C.	5.42	24-25, 1890
Tyler, Tex.	5.99	11-12, 1892	Junction, N. J.	5.34	18-19, 1894
S. McAlester, Ind. T.	5.98	23-24, 1893	Wedgwood, N. Y.	5.34	10, 1890
Society Hill, S. C.	5.91	11-12, 1893	New Braunfels, Tex.	5.27	8, 1890
Horse Cove, N. C.	5.83	12-13, 1892	Palestine, Tex.	5.26	10-11, 1894
Asbury Park, N. J.	5.83	18-19, 1894	Mount Vernon, Mo.	5.22	22, 1893
New Brunswick, N. J.	5.74	18-19, 1894	Centerville, Mo.	5.20	8-9, 1890
Minden, La.	5.72	22, 1890	Brewer Mine, S. C.	5.20	13-14, 1890
Okolona, Miss.	5.70	25, 1893	Millen, Ga.	5.20	20-22, 1892
Titusville, Fla.	5.64	25-26, 1894	Hypoluxo, Fla.	5.20	15-16, 1892
Opelousas, La.	5.60	11-12, 1894	Cabool, Mo.	5.20	22, 1893
Minnewaska, N. Y.	5.60	19-20, 1894	Branchville, S. C.	5.20	27-28, 1894
Glenora, Oregon	5.58	22, 1892	Hatteras, N. C.	5.16	20-27, 1894
Woodbine, N. J.	5.55	18-19, 1894	Roseland, La.	5.15	7-8, 1893
Bristol, Tenn.	5.54	7, 1893	Lumberton, N. C.	5.11	26-27, 1894
Alma, Mich.	5.50	7, 1894	Dover, N. J.	5.08	18-19, 1894
Midland, Tex.	5.50	29-30, 1891	Darien, Ga.	5.03	26, 1894
St. Georges, S. C.	5.50	26-27, 1894	Mobile, Ala.	5.01	7-8, 1893
Bragg, Ga.	5.49	26-27, 1894	New Iberia	5.00	7, 1893

Exceptional precipitation for one hour or less.

Station and state.	Amount.	Time.	Date.
Demos, Ohio	2.00	0 05	5, 1890
Bismarck, N. Dak. *	0.75	0 05	7, 1894
Milwaukee, Wis.	0.65	0 05	9, 1891
Jacksonville, Fla.	0.63	0 05	9, 1891
Do	0.54	0 05	14, 1892
Wilmington, N. C.	0.47	0 05	20, 1892
Key West, Fla.	0.45	0 05	20, 1891
Jupiter, Fla.	0.40	0 05	8, 1897
Galveston, Tex.	0.35	0 05	16, 1891
Jacksonville, Fla.	0.39	0 05	5, 1894
New York, N. Y.	0.35	0 05	17, 1890
Jupiter, Fla. *	0.35	0 05	14, 1894
Kansas City, Mo.	0.35	0 05	3, 1894
Savannah, Ga.	0.35	0 05	12, 1890
Do	0.35	0 05	24, 1890
Norfolk, Va.	0.35	0 05	25, 1892
Do	0.35	0 05	1, 1894
Dodge City, Kans.	0.34	0 05	3, 1892
Savannah, Ga.	0.34	0 05	9, 1893
Norfolk, Va.	0.32	0 05	10, 1893
Do	0.32	0 05	14, 1890
Philadelphia, Pa.	0.31	0 05	14, 1892
Baltimore, Md.	0.30	0 05	8, 1894
New York, N. Y.	0.30	0 05	8, 1894
Do	0.30	0 05	7, 1893
Jupiter, Fla.	0.30	0 05	2, 1892
Memphis, Tenn.	0.30	0 05	4, 1892
Jupiter, Fla.	0.30	0 05	5, 1890
Washington, D. C.	0.30	0 05	11, 1890
Nashville, Tenn.	0.26	0 05	10, 1894
Cincinnati, Ohio.	0.25	0 05	4, 1892
Jupiter, Fla.	0.25	0 05	1, 1893
Do	0.25	0 05	15, 1893
Jacksonville, Fla.	0.25	0 05	7, 1893
Tampa, Fla.	0.25	0 05	8, 1893
Indianapolis, Ind.	0.25	0 05	19, 1892
Galveston, Tex.	0.25	0 05	17, 1894
Pittsburg, Pa.	0.25	0 05	7, 1894
Kansas City, Mo.	0.25	0 05	10, 1892
Savannah, Ga.	0.25	0 05	12, 1892
New York, N. Y.	0.45	0 05	21, 1882
Kirkwood, S. C.	1.50	10 10	14, 1890
Jacksonville, Fla.	1.18	10 10	6, 1891
Pine Apple, Ala.	1.10	10 10	5, 1890
Bismarck, N. Dak. *	1.00	10 10	7, 1894
Wilmington, N. C.	0.74	10 10	20, 1892
Milwaukee, Wis.	0.70	10 10	9, 1894
Norfolk, Va.	0.60	10 10	25, 1892
Kansas City, Mo.	0.60	10 10	3, 1894
Jacksonville, Fla.	0.59	10 10	14, 1892
Dodge City, Kans.	0.58	10 10	3, 1892
Jupiter, Fla.	0.55	10 10	2, 1892
Do	0.50	10 10	15, 1893
Norfolk, Va.	0.50	10 10	10, 1893
Jupiter, Fla. *	0.50	10 10	14, 1894
New York, N. Y.	0.50	10 10	8, 1894
Norfolk, Va.	0.50	10 10	1, 1894
Savannah, Ga.	0.50	10 10	9, 1893
Alpena, Mich.	1.05	11 15	10, 1884
Marion, Kans.	1.50	15 15	16, 1894
Spencer, W. Va.	1.10	15 15	22, 1893
Lycippus, Pa.	1.07	15 15	8, 1894
Omaha, Nebr.	1.00	15 15	28, 1881
Howe, Tex.	3.00	20 10	10, 1880
Emilie, Kans.	1.24	20 10	3, 1891
Louisville, Ga.	2.00	20 25	22, 1892
Franklin, Ky.	2.00	30 30	4, 1892
Charleston, S. C.	2.00	30 30	13, 1877
North Bridgton, Me.	1.93	30 30	20, 1894
Cedar Keys, Fla.	1.70	30 30	2, 1888
Orlando, Fla.	1.67	30 30	7, 1893
Carrollton, Ky.	1.59	30 30	4, 1894
Rio Grande City, Tex.	1.93	0 35	26, 1899

*Exceptional precipitation for one hour or less—Continued.*

Station and state.	Amount.		Date.
	Inches.	h. m.	
Lycippus, Pa.	1.80	0 35	7, 1894
Bethlehem, Pa.	3.29	0 40	8, 1894
Monroe, La.	4.12	0 45	22, 1890
Fort Davis, Tex.	2.42	0 45	9, 1880
Fort Meade, Fla.	3.50	1 00	6, 1891
Purcell, Ind. T.	3.30	1 00	24, 1893
Horse Cove, N. C.	3.00	1 00	17, 1894
Luling, La.	9.32	4 10	20-21, 1891

\*Record incomplete.

HAIL.

The following are the dates on which hail fell in the respective States:

Arizona, 2, 30. California, 30. Colorado, 7, 27, 28. Florida, 24. Idaho, 13. Illinois, 3, 7, 8, 9. Indiana, 12, 18. Iowa, 4, 7, 9, 20, 21, 22. Kansas, 1 to 8, 16, 20, 23, 28. Maine, 5. Massachusetts, 10. Michigan, 4, 7, 10, 22, 23, 24. Minnesota, 21. Missouri, 8, 20, 22. Montana, 13, 21. Nebraska, 7, 12. Nevada, 1, 30. New Jersey, 8. New Mexico, 4, 8, 9. New York, 25. North Carolina, 1. North Dakota, 22. Ohio, 8. Oklahoma, 20. Oregon, 12, 26, 27. Pennsylvania, 8, 10. South Dakota, 5, 7. Tennessee, 17. Texas, 5, 20. Utah, 5. Washington, 25, 26. Wisconsin, 7, 9, 14. Wyoming, 30.

SLEET.

The following are the dates on which sleet fell in the respective States:

Colorado, 2, 4, 7, 8, 9, 13, 27, 28, 30. Minnesota, 29. Montana, 12, 13. Nebraska, 14. Nevada, 27, 29, 30. New York, 25. North Dakota, 23, 29. Oregon, 13. South Dakota, 29. Utah, 7, 11.

MONTHLY SNOWFALL.

The depth of snow that fell during the month of September was not sufficient to require its presentation on Chart V. The dates of first snowfall are given in the table of frosts on page 360. The actual depths, so far as reported, together with the amount lying on the ground at the middle and close of the month, are shown in the following table:

By comparison with the normal amount of snowfall for these stations it will be seen that the quantity of snow at high stations in the Rocky Mountain plateau is rather above the normal for September.

*Monthly snowfall and amounts on ground on the 15th and at close of month.*

State and station.	Total.	15th.	30th.	State and station.	Total.	15th.	30th.
<i>California.</i>				<i>Montana—Cont'd.</i>			
Cisco	Inches. 7.0	Inches.	Inches.	Kipp	Inches. 2.0		
La Porte	7.5			Marysville	1.8		
Summerdale			7.0	Virginia City	8.5		
Summit	5.0			<i>Nevada.</i>			
<i>Colorado.</i>				Austin	4.0		4.0
Olimax	12.0			Belmont	2.1		2.0
Pikes Peak	21.2	5.8	0.5	Ely	1.0		
Red Cliff	3.5			Empire Ranch	1.0		
Ruby	9.0		1.0	Marlette Lake	3.8		2.0
Steamboat Spring	4.0		1.0	Osceola	2.0		
<i>Idaho.</i>				Palmetto	6.0		1.5
Lake	6.0			<i>Oregon.</i>			
Paris	4.0			Mount Hood	6.2		
<i>Montana.</i>				<i>Utah.</i>			
Butte	1.5			Grouse Creek	3.0		
Hogan	6.0			Scotfield	1.0		0.5

WIND.

PREVAILING WINDS.

The prevailing winds for September, 1894, viz, those that were recorded most frequently at Weather Bureau stations, are shown in Tables I and VIII; they are not given on Chart II, as has hitherto been the custom, but the resultant winds are published instead.

RESULTANT WINDS.

The resultant winds for the current month, as deduced from the hourly records by self-registers at about 67 regular Weather Bureau stations, are given in Table VIII. Other resultants, deduced from the personal observations made at 8 a. m. and 8 p. m., are given in Table IX. These latter resultants are also shown graphically on Chart II, in connection with the isobars based on the same system of simultaneous observation; the small figure attached to each arrow shows the number of hours that this resultant prevailed, on the assumption that each of the morning and evening observations represents one hour's duration of a wind of average velocity; these figures (or the ratio between them and the total number of observations in this month) indicate the extent to which winds from different directions counterbalanced each other. The original north, south, east, and west components are given in detail in Table IX.

During September the resultant movement was generally from the east and northeast in the south Atlantic and east Gulf States; from the southeast from the Rocky Mountains to the Mississippi River and upper Lake region; from the south in New England and New York.

HIGH WINDS.

Maximum wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows; (maximum velocities are averages for five minutes;

extreme velocities are gusts of shorter duration, and are not given in this table):

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
<i>Miles.</i>							
Amarillo, Tex.	9	54	n.	Key West, Fla.	25	87	sw.
Block Island, R. I.	30	60	ne.	Kittyhawk, N. C.	27	60	ne.
Bismarck, N. Dak.	22	59	nw.	Pikes Peak, Colo.	13	86	sw.
Buffalo, N. Y.	10	50	w.	Do.	22	82	nw.
Do.	26	54	se.	Do.	28	84	sw.
Fort Canby, Wash.	25	72	se.	Southport, N. C.	27	54	se.
Do.	26	54	se.	Tatoosh Island, Wash.	20	51	s.
Huron, S. Dak.	12	62	se.	Do.	24	52	e.
Do.	13	51	s.	Titusville, Fla.	24	50	se.
Do.	22	60	w.	Do.	25	66	ne.
Do.	25	55	s.	Do.	26	60	sw.
Jupiter, Fla.	25	50	ne.	Winnemucca, Nev.	6	50	nw.
Key West, Fla.	24	62	ne.				

LOCAL STORMS.

Destructive or severe local storms were reported as follows:  
**1st.**—Near Bailey, N. C., hailstorm. Wichita, Kans., thunderstorm. Salt Lake City, Utah, rainstorm.

**2d.**—Louisville, Ky., Indianapolis, Ind., and Coffeyville and near Wichita, Kans., thunderstorms.

**3d.**—Tampa, Fla., one person stunned by lightning. Near Keesees Ferry, Ark., and Yates Center, Kans., thunderstorms.

**4th.**—Central, S. C., one person stunned by lightning. Near Thornville, Mich., hailstorm. Wyandotte, Mich., and Winfield, Kans., thunderstorms. Near Wichita, Kans., one person killed and 4 shocked by lightning. Metz, Mo., horse killed by lightning.

**5th.**—Yates Center, Kans., thunderstorm. Altoona, Kans., one person killed and one stunned by lightning.